

STUDIES ON THE MARYLAND FLORA VII:

ADDITION OF CYPERUS HOUGHTONII TORR. AND JUNCUS TRIFIDUS VAR.

MONANTHOS (JACQ.) BLUFF & FING. TO THE STATE FLORA

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The diversity of the Maryland flora is largely attributed to its geologic and physiographic complexity. In spite of a small land area, five physiographic provinces (the Appalachian, Ridge and Valley, Blue Ridge, Piedmont, and Coastal Plain Provinces) traverse the State and display a remarkable sequence of geologic formations, each of which often supports a characteristic and local flora. Although the Maryland flora in general has been extensively studied and has attracted the interests of such noteworthy early botanists as Kalm (1770) and Rafinesque (1832), systematic studies of local geologic formations, edaphic districts, and unusual forest types in Maryland continues to reward careful collectors with additions to the known flora.

This note reports the recent discovery of Cyperus Houghtonii Torr. and Juncus trifidus var. monanthos (Jacq.) Bluff & Fing. by the author during a continuing study of the flora of local geologic formations. These records are here presented as first reports for the State. Neither species is included in the treatments of the Maryland flora given by Fischler (1977), Fisher et al. (UNDATED), Herman (1946), Hickey (1975), Higgins et al. (1971), Higman (1968), Hotchkiss and Stewart (1947), Kologiski et al. (1974), Krauss et al. (1971), Mercer (1968), Monteferrante (1973), Norton and Brown (1946), Phillip and Brown (1965), Sipple (1978), Stieber (1974), Tatnall (1946), Terrell (1970), Thompson (1974), Wass (1972) and Witman (1954).

Cyperus Houghtonii Torr. occurs in dry, especially sandy soil from Quebec to Manitoba, south to Virginia and North Carolina and northwest to Iowa (Gleason and Cronquist 1963, Radford et al. 1968). Although this umbrella-sedge has a rather extensive distribution throughout the central and northeastern U.S., it is not of frequent occurrence and is extremely local towards the southern limit of its range. I have collected it in Maryland at the following two localities - Ridge and Valley Province, Allegany Co., E. slope of the sandstone escarpments of the Cumberland Narrows, grassy balds near Lovers Leap and sandy slope on the margins of a powerline right-of-way in accumulated sandstone debris, 7-26-80, Riefner 80293; Coastal Plain Province, Worcester Co., sand barrens on the barrier island of Ocean City, near 100 St. and Costal Hwy. before pine barrens, 9-20-80, Riefner 80380. The Ocean City locality represents the only known station on the entire Delmarva Peninsula (pers. comm. Dr. Norman Dill, Delaware State College).

This species has been nominated for rare status in North Carolina by Hardin et al. (1977), in Virginia by Porter (1979), and in Pennsylvania by Wiegman (1979). Although additional review may be necessary to ascertain that these occurrences are natural and not artificial introductions, the species should be considered for inclusion in the list of rare Maryland plants.

Juncus trifidus var. monanthos (Jacq.) Bluff & Fing. occurs locally in exposed rock crevices and cliff ledges at higher elevations in the mountains of Virginia, North Carolina and Tennessee (Gleason and Cronquist 1963, Radford et al. 1968). I collected this variety on the W. slope of the steep-sided, sandstone escarpments of the Cumberland Narrows, in exposed crevices at middle and upper cliff elevations, Ridge and Valley Province, Allegheny Co., 7-26-80, Riefner 80294. This single Maryland station represents a northern extension of the known range by approximately 75 miles from the nearest population growing on greenstone cliffs in Page Co., Virginia. This taxon has been nominated for rare and endangered status in North Carolina by Hardin et al. (1977) and in Virginia by Porter (1979), and is here proposed as a candidate for addition to the rare and endangered list prepared for Maryland by Broome et al. (1979). The Cumberland Narrows is the finest exposure of the Juniata formation in Maryland. Intensive survey of other rugged sites similar to the Cumberland Narrows in the Ridge and Valley Province in West Virginia and Pennsylvania, may reveal additional populations of the one-flowered rush.

The discovery of Cyperus Houghtonii Torr. and Juncus trifidus var. monanthos (Jacq.) Bluff and Fing. in Maryland, indicates that present-day knowledge of the State's flora is still incomplete. Relatively inconspicuous, these species apparently escaped detection by earlier botanists. It is hoped that these records will stimulate new interest in the floristic plant geography of Maryland, and initiate more intensive and systematic collecting programs within the State. Voucher specimens have been placed in the Herbarium of the University of Maryland at College Park (MARY).

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LITERATURE CITED

- Broome, C. Rose, James L. Reveal, Arthur O. Tucker and Norman H. Dill. 1979. Rare and endangered vascular plant species in Maryland. U.S. Fish and Wildlife Service, Newton Corner, MA.
- Fischler, A. R. 1977. The plants of Suitland Bog, Maryland, an annotated checklist. Unpublished manuscript.

- Fisher, E., E. Francis, E. Kneebone, and M. Michel. Undated. Untitled. [List of plants collected by Edouards Baltars in Maryland, 1951-1971, not included in Norton & Brown's catalogue of 1946.] Mimeographed manuscript, Cylburn Park Wildflower Preserve and Garden Center, Baltimore, Maryland.
- Gleason, H. A., and A. Cronquist. 1963. Manual of the vascular plants of the northeastern United States and adjacent Canada. Van Nostrand Reinhold Co., New York.
- Hardin, J. W., R. L. Kologiski, J. R. Massey, J. F. Matthews, J. D. Pittillo, and, A. E. Radford. 1977. "North Carolina endangered and threatened vascular plants," pp. 56-142. In: J. E. Cooper, S. S. Robinson, and J. P. Funderburg (eds). Endangered and threatened plants and animals of North Carolina. North Carolina State Museum of Natural History, Raleigh, NC.
- Herman, F. J. 1946. A checklist of plants in the Washington-Baltimore area. Mimeograph. Washington, D.C.
- Hickey, C. J., II. 1975. The vascular flora of Catoctin Mountain Park, Frederick County, Maryland. Unpublished Master's thesis, Towson State College Library, Towson, MD.
- Higgins, E. A. T., R. D. Pappleye, and R. G. Brown, 1971. The flora and ecology of Assateague Island. Univ. Maryland Agric. Exp. Sta. Bull. A-172: 1-70.
- Higman, D. 1968. An ecologically annotated checklist of the vascular flora of the Chesapeake Bay Center for Field Biology, with keys. 2nd. ed. Smithsonian Institution, Washington, D.C.
- Hotchkiss, N., and R. E. Steward. 1947. Vegetation of the Patuxent Research Refuge, Maryland. *Amer. Midl. Naturalist* 38: 1-75.
- Kalm, P. 1770. Travels into North America. Transl. J. R. Forster. 2 vols. W. Eyres, Warrington.
- Kologiski, P. L., F. R. Hivick, C. F. Reed, and D. W. Jenkins. 1974. "Appendix D. Rare, endangered, and endemic plants of the Chesapeake Bay region," pp. D-1-0-48. In: D. W. Jenkins (ed.), Natural areas of the Chesapeake Bay region: Ecological priorities. Center for Natural Areas, Ecological Program of the Smithsonian Institution, Washington, D.C.
- Krauss, P. W., R. G. Brown, R. D. Pappleye, A. B. Owens, C. Shearer, E. Hsiao and J. L. Reveal. 1971. Checklist of plant species of the Chesapeake Bay occurring within the high tide limits of the Bay and its tributaries. Univ. Maryland Techn. Bull. 2002: 1-33.

- Mercer, W. O. 1968. Taxonomic and ecological survey of the flora of Calvert County, Maryland. Unpublished Master's thesis, University of Maryland, College Park.
- Monteferrante, F. J. 1973. A phytosociological study of Soldiers Delight, Paltimore County, Maryland. Unpublished Master's thesis, Towson State College Library, Towson, Maryland.
- Norton, J. E. S., and R. G. Brown. 1946. A catalog of the vascular plants of Maryland. *Castanea* 11: 1-51.
- Phillip, C. C., and R. G. Brown. 1965. Ecological studies of transition-zone vascular plants in South River, Maryland. *Chesapeake Sci.* 6: 73-81.
- Porter, D. M. 1979. Rare and endangered vascular plant species in Virginia. U.S. Fish and Wildlife Service, Newton Corner, MA.
- Radford, A. E., H. E. Ahles, and C. R. Bell. 1968. Manual of the vascular flora of the Carolinas. The University of North Carolina Press, Chapel Hill.
- Rafinesque, C. W. 1832. New and rare plants of Maryland near Baltimore. *Atlantic Journal*, Vol. I, p. 119.
- Sipple, W. S. 1978. An atlas of vascular plant species distribution maps for tidewater Maryland. Wetland Publication no. 1. Department of Natural Resources, Water Resources Administration, Annapolis, MD.
- Stieber, M. T. 1971. The vascular flora of Anne Arundel County, MD.: An annotated checklist. *Castanea* 36: 263-312.
- Tatnall, R. R. 1946. Flora of Delaware and the Eastern Shore: An annotated list of the ferns and flowering plants of the peninsula of Delaware, Maryland and Virginia. The Society of Natural History of Delaware, Lancaster, Pennsylvania.
- Terrell, E. E. 1970. Spring flora of the Chesapeake and Ohio Canal area, from Georgetown to Seneca, Maryland. *Castanea* 35: 1-25.
- Thompson, O. H. 1974. An annotated checklist and ecological notes on the plants of the marshes occurring in the Maryland portion of the Chesapeake Estuary. Unpublished Master's thesis, University of Maryland Library, College Park.
- Wass, M. L. (ed.). 1972. A checklist of the biota of Lower Chesapeake Bay with inclusions from the upper bay and the Virginia sea. *Virginia Inst. Marine Sci. Spec. Rept.* 65: 1-200.

- Wiegman, P. G. 1979. Rare and endangered vascular plant species in Pennsylvania. U.S. Fish and Wildlife Services, Newton Corner, MA.
- Witman, H. W. 1954. The flora of Cecil County, Maryland: A preliminary survey. Unpublished Master's thesis, Pennsylvania State University Library, University Park.